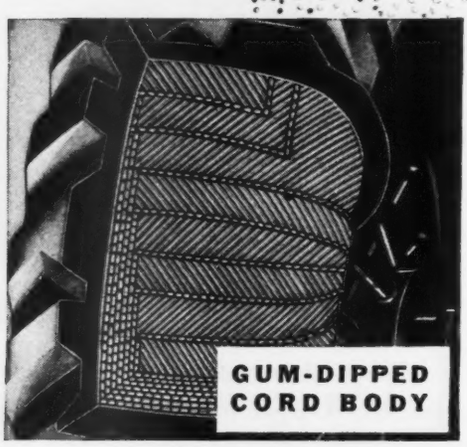
LIBRARY
UNIV. OF MD.
R.I.T.

RUTH GLOVER

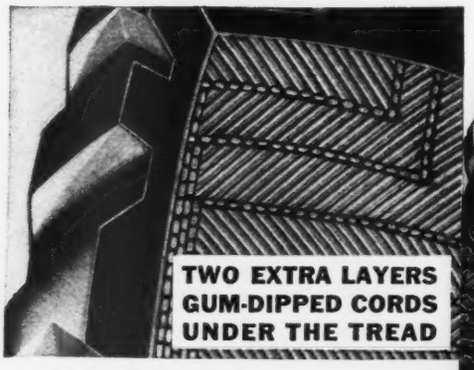
THESE PATENTED CONSTRUCTION FEATURES MADE THIS NEW GROUND GRIP TIRE POSSIBLE



THE new Firestone Ground Grip Tire is the greatest traction tire ever built. It has 54% more tread rubber to give your car, truck, tractor and farm implements the greatest traction ever known.

Gum-Dipping, the Firestone patented process which soaks every cord in liquid rubber, makes it possible for this tire to stand the terrific strains and stresses of the extra pulling power. Firestone Tires are the only tires built that are Gum-Dipped.

The tread is built of extra tough rubber and designed with deep grooves between scientifically placed cross bars, giving super-traction and long wear. Firestone Ground Grip Tires are self-cleaning. (Chains are not needed.) The bars of the rubber are so placed that they will not bump on paved roads, giving you easier riding and longer wear.



READ WHAT FARMERS SAY ABOUT THEIR SAVINGS WITH FIRESTONE GROUND GRIP TIRES

TEXAS... Mr. C. W. Wardlow, McKinney, Texas, writes:
"Approximately 28% saving in fuel, and 38% more acres worked each day, and am able to go through any kind of 'tough going' due to your new tread design on the Ground Grip Tires."

OHIO... Mr. G. I. Henning of West Salem, Ohio, writes:
"Want you to know the effectiveness of your pneumatic tire on our binder—it saves time, we cut grain faster, it is easy on the man riding on the binder and now we never have to stop to tighten up bolts."

SOUTH DAKOTA... Chrig S. Anderson, Badger, S. D., says:
"I like Firestone Tires because the tractor runs easier, uses less fuel, travels faster and hauls larger loads."

NEBRASKA... Dr. C. E. Larsen of Tilden, Nebraska, writes:
"I purchased a set of your new Ground Grip Tires about two months ago for my coupe... I have not been able to stick this car in mud since they were put on and they have already saved me three sets of chains and I would not be without them if they cost double what you charge."

IOWA... Mr. H. Elsbury of Sutherland, Iowa, writes:
"With Firestone Tires on my McCormick Deering Tractor and Separator I have taken in over $100 from farmers I could not reach with other wheels."

CALIFORNIA... Mr. Robert E. Hooker, Highland, Cal., says:
"Firestone Tires have proven a very profitable and satisfactory investment in caring for my groves. I am able to do better work in about 25% less time."

GROUND GRIP TIRES FOR CARS		GROUND GRIP TIRES FOR TRUCKS		GROUND GRIP TIRES FOR TRACTORS	
4.40/4.50/4.75-21	$7.85	32x6 TRUCK TYPE	$27.65	5.50-16	$11.05
4.75/5.00-19	8.50	32x6 H.D.	36.25	6.00-16	12.40
4.50/4.75/5.00-20	8.35	6.00-20	16.95	7.50-18	17.45
5.25/5.50-17	10.55	6.50-20	21.95	9.00-36	73.95
5.25/5.50-18	10.65	7.00-20	29.10	11.25-24	66.60
6.00-16	11.95	7.50-20	35.20	12.75-28	96.50

OTHER SIZES PRICED PROPORTIONATELY LOW

GUARANTEE... This heavy, Super-Traction tread is guaranteed not to loosen from the tire body under any conditions, and all other parts of the tire are fully guaranteed to give satisfaction.

See your nearest Firestone Auto Supply and Service Store or Firestone Tire Dealer and let him show you how the new line of Ground Grip Tires will save time and money on your farm. Remember, there is also a complete line of Firestone Auto Supplies for your automobile needs.

Listen to the Voice of Firestone—featuring Margaret Speaks, Soprano, and the Firestone Choral Symphony, with William Daly's Orchestra—every Monday night over N. B. C.—WEAF Network

Firestone

Ask the Firestone Auto Supply and Service Store or Dealer for your copy of the new Firestone Farm Catalog of Tires, Batteries and Auto Supplies.

© 1935, F. T. & R. Co.

The National Fruit Magazine of America

American FRUIT GROWER

Representing a Billion Dollar Industry

SEPTEMBER Vol. 55 (Title Registered in U.S. Patent Office) No. 9 1935

CONTENTS

In Support of the King!—An Editorial 3

A Pictorial Review of Recent Events 4

Apple Storage 5
By George F. Potter

When to Pick Apples 7
By J. R. Magness

American Pomology 8
A Page Conducted in the Interests of the American Pomological Society

I.A.A. Convention and Ohio Orchard Day 10
By William H. Zipf

Books for Fruitmen 13

Michigan Honors Taft 14

Breeding Better Nut Varieties 15

(The third installment of H. D. Poore's article on "Apple Juices, Concentrates and Sirups" will appear in the October issue, as will the State News and Who's Who in Pomology departments.)

AMERICAN FRUIT GROWER
Published Monthly by
AMERICAN FRUIT GROWER PUBLISHING CO.
1370 Ontario St., Cleveland, O.

SUBSCRIPTION RATES
Domestic, Except Cleveland, 3 years $1.00. 1 yr. 50c. Cleveland and foreign (except Canada) $1.00 per year. Canada (including tax) $1.50 per year. Entered as second-class matter at Post Office at Cleveland, Ohio, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois.

E. G. K. MEISTER
Publisher

DEAN HALLIDAY, Managing Editor — DR. J. H. GOURLEY, Associate Editor
WILLIAM H. ZIPF, Field Editor — T. J. TALBERT, Contributing Editor
MARY LEE ADAMS, Home Economics Editor

CHICAGO REPRESENTATIVES
J. C. BILLINGSLEA CO.,
123 W. Madison St. Phone—Central 0465

ROGER FISON, EASTERN MGR.,
280 Madison Ave., New York
Phone—Caledonia 5-5300

IN SUPPORT OF THE KING!

"AN apple a day," etc., etc., despite its one-time popularity, was not a good slogan. It cast disparagement upon an ancient and honorable profession. Even worse, however, it insidiously created the impression that one apple a day was enough for anybody.

At the present moment, a bumper crop of commercial apples looms on the fruit growing horizon. Instead of causing joy, it is causing consternation. Growers foresee glutted markets and low prices. They also fear that the consumers' appetites are not equal to the crop. And, worse still, the surplus cannot be shipped overseas for the export market is at a low level.

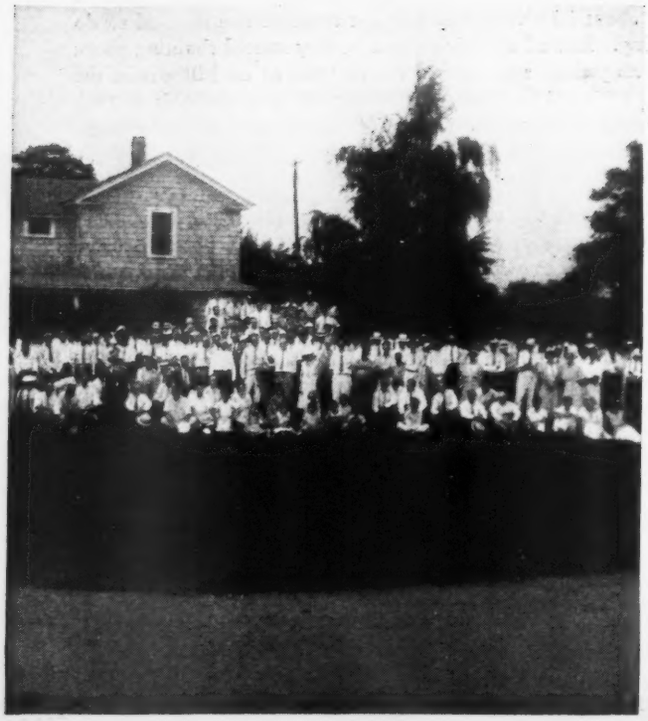
Truly a sad picture, if you confine your gaze to the dark side only. But there is a bright side. Who said "an apple a day" is enough for every man, woman and child in this country? Who said the American public—with the high living standard of any peoples in the world—couldn't consume a bumper crop of wholesome home-grown apples—and smack their lips with relish? To prove it, just tickle their palates and whet their appetites for apples! And what will do this? Advertising—*Advertising*—ADVERTISING!

Let's look at the citrus folks! For years, they have been organized advertisers on a big scale. And then this year they had a 25% increase in crops. What did they do about it? Why they just got together and decided to do still more advertising. Instead of crying about it, they started shouting about it! And now, in magazines and newspapers as well as on billboards, the orange people are telling Mrs. American Housewife that there is a 25% above average bumper crop and it's her golden opportunity to buy oranges as she never bought them before. What's the result? Why the citrus people are moving their surplus crop, of course.

It is true, however, that the citrus people have certain basic advantages not possessed by apple growers as a whole, but that has all been discussed before. The main point is that if apple growers are going to maintain their product as the "King of fruits" it can only be done, in these modern times, by organized advertising.

Fortunately, the National Apple Institute has recently been organized. In support of this national source of appetizing information about apples, there should also be sectional campaigns and, in addition, individual campaigns, based upon brand, quality—and above all, Appetite.

There's an old, well-proved advertising adage that says: "Tell 'em and sell 'em!"



PICTORIAL REVIEW OF RECENT EVENTS

Members and guests attending the 40th Annual Convention of the International Apple Association, recently held in Cleveland, climaxed their three-day meeting with a gala banquet, pictured at top.

Center left—Ohio's extension pomologist, Frank H. Beach, offers a picking demonstration for those in attendance at the summer meeting of the Ohio State Horticultural Society at the Grand River Orchards, Geneva, Ohio.

Center right—W. T. Mann (right), owner of the Grand River Orchards and host to the Ohio society, pauses to chat with Dr. J. H. Gourley (left) and Paul Stark during the busy meeting.

At the left is shown a portion of the crowd present at the summer meeting of the Ohio society where they were accorded trips through the Grand River Orchards to view the modern irrigation and other improvements.

APPLE STORAGE

By GEORGE F. POTTER

STORAGE of the apple crop is essential to marketing. Dealers must store the fruit of those who sell at harvest, and therefore storage problems confront every grower directly or indirectly.

The objective of storage is to check the rate of ripening. Commercially in America this is done by holding at low temperatures. Placing apples in an atmosphere containing a considerable quantity of carbon dioxide gas has a tendency, however, to slow up the life processes just as does low temperature. In England, some commercial storages are now in operation in which this method is used to increase the life of apples in storage. As yet, in America, the use of gas storage is wholly on an experimental basis.

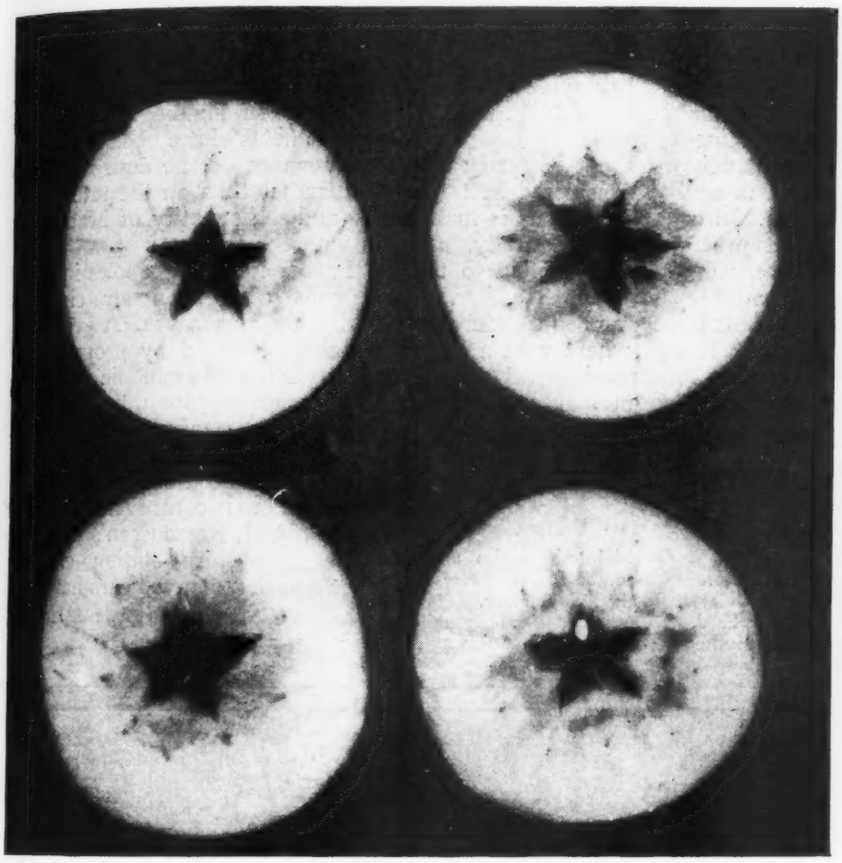
A temperature of 32° F. has been found to reduce the rate of softening in apples to about ⅛ of that at 70°. At 40° and at 50° respectively, apples ripen one-quarter and one-half as fast as at 70°. Since the juice of apples contains sugar and other substances, fruits of most varieties do not freeze until the temperature reaches 29° or 28°. Hence, it would seem feasible to utilize temperatures even lower than 32° to increase the holding period. It has been found that at 30°, apples ripen about 25% slower than at 32°. Yet, results with temperatures less than 32° have on the whole been disappointing, because apparently not only the rate of ripening but the character of the final product is altered. After picking, any starch which is present in the apples is transformed to sugar. Acids which are present are slowly dissipated and aromatic substances characteristic of the variety are developed as the full ripe stage is reached. When apples are held at 30°, the quantity or character of the substances formed is altered and they tend even when ripe to be lower in quality than apples ripened at 32° or higher temperatures.

Dr. George F. Potter is head of the Horticulture Department of the University of New Hampshire at Durham. He has held this position for a number of years and has gained an outstanding reputation as a practical New England Orchardist. In his own orchard at his home near Durham, Dr. Potter "practices what he teaches." He was the principal speaker at the recent Ohio Orchard Day at the Ohio Experiment Station, Wooster.

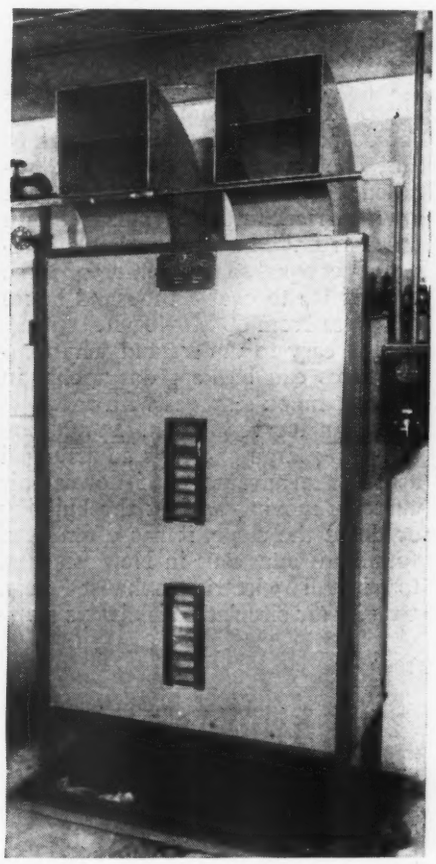
It has also generally been noted that the skin of the apple tends to remain green instead of turning an attractive yellow. This may be preferred on certain markets. On page 6 there is shown a graph of the estimated quality of McIntosh apples stored at 40°, 32°, and 30° respectively by Professor Rasmussen at the New Hampshire Experiment Station. This indicates rather clearly that while a somewhat longer life is attained at 30°, it is at the expense of quality. While it is true that late in the season these apples are considered somewhat better than those stored at 32°, this is limited to the late winter months and even then the apples are not worthy to maintain the variety reputation.

Low temperatures may also lead to disorders in the flesh of the fruit. The Yellow Newtown as grown in California is a notable example in which a so-called internal browning is developed even at 32°, and for good results, temperatures of 35° to 38° should be maintained. Temperatures of 32° are too low also for varieties subject to trouble known as soft scald.

Apples to be held at 40° or less must usually be placed in cold storage



As illustrated above the McIntosh is subject to an internal breakdown in the region of the core. Delayed storage reduces or eliminates this trouble.



This machine takes the place of piping on the walls and ceilings. Air is drawn up over the coils inside and forced out at the top.

warehouses properly insulated and mechanically refrigerated. Storage in cellars or in insulated structures above ground, cooled solely by the admission of large quantities of air during the coolest parts of the day, are practical for certain varieties and in those sections of the country where cool weather follows the harvest. It is not usually possible in such structures to maintain a temperature cooler than the average outdoor shade temperature, and in fact this can be maintained only with the best management. Comparatively large ventilators must be opened whenever the temperature outdoors is lower than that within the building, and closed during the warmest parts of the day. The difficulty in maintaining lower temperatures is due in considerable measure to the heat produced by the fruit during its life processes. It has been estimated that 1000 bushels of fruit at 60° F. produce daily as much heat as would be taken up by the melting of 700 pounds of ice. In addition to this, one must contend with the so-called "sensible" heat which is the heat carried into the storage with warm fruit. Thus, it requires a cooling effect equal to the melting of three tons of ice to cool a thousand boxes of apples from 60° to 40° F.

It is easy to understand why temperatures can be kept down only in those common storages with adequate provision for ventilation. In addition to having large openings so arranged as to take advantage of normal air currents moving against the building or down the slope, it has often been found advantageous in New England to install electric exhaust fans. Gravity air circulation is always slowest when the differential between indoor and outdoor temperatures is small. It is just at that time that the largest volume of air should be moved through the fruit to carry away the heat.

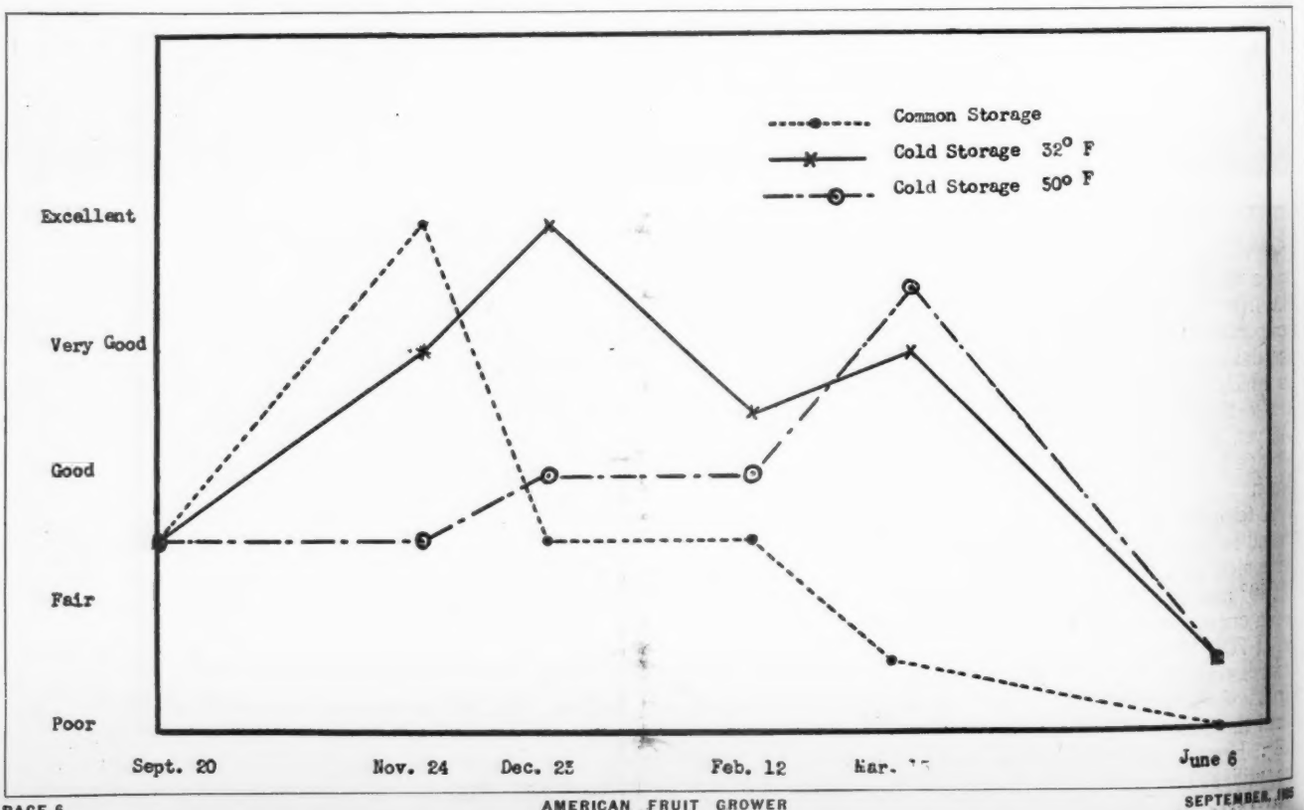
Ordinarily if full season storage is desired, only late varieties harvested when the outdoor temperatures are approaching freezing can be kept satisfactorily in a common storage. In the latitude of southern New Hampshire, for instance, varieties like McIntosh are excellent for fall trade when held in common storage, but after Christmas compete with difficulty against cold storage stock. If fruit is infested with a pest like the railroad worm, cold storage has an immense advantage over common storage in that it instantly checks the development of the eggs or insects and it has been shown by Chapman in New York and Rasmussen in New Hampshire that after apples are held for 30 to 35 days at 32° F. no live insects remain.

A humidity of about 85% of saturation is usually considered best for apples. In cold storage this is maintained practically automatically, unless very dry air is admitted to the warehouse in cold winter weather. It is a factor to be watched carefully in common storage, where with a large volume of air passing across the apples, evaporation may readily become excessive. Piping and valves for ready and frequent wetting of concrete floors are essential and if the underlying soil is dry a gravel floor may need occasional watering.

When fruit is placed in cold storage removal of the heat brought in with the fruit is a more simple problem than in common storage but often the load on the refrigerating equipment occasioned by bringing in large quantities of warm fruit daily is under estimated. When the fruit has once reached the desired cold storage temperature, the heat to be removed is limited to that which leaks in through the insulation, the very small amount evolved by the fruit at 32°, and that which arises from condensation of water. Whenever one pound of water enters the storage in the form of vapor and is condensed on the floor or refrigeration pipes about 1000 British Thermal Units of heat are produced. Yet all of these sources of heat are comparatively small compared to the load to be met in cooling the fruit at harvest time and too often especially in building farm storages requirements have been based on maintenance of the desired temperature rather than on the rate of picking and the quantity of heat brought in with the fruit.

Proper cooling of apples in storage depends also upon air circulation within the warehouse. A gravity circulation produced by proper placing of the brine or ammonia coils is the most common system, but for several years forced draft refrigeration machines such as that illustrated on page 5 have been on the market. Although there is controversy as to their merits, Prof. Rasmussen's tests at the New Hampshire station extending over a period of five years have given

(Continued on page 12)



Quality ratings for McIntosh apples under different storage conditions. The flavor of fruit stored at 30° F. is disappointing. (From data of E. J. Rasmussen, New Hampshire Agricultural Experiment Station.)

Fruit pressure tester, showing method of its use in testing an apple. Reproduced from Dept. Bulletin 1448, U. S. Dept. of Agriculture.

WHEN TO PICK APPLES

By J. R. MAGNESS

PRINCIPAL POMOLOGIST, U. S. DEPARTMENT OF AGRICULTURE

IN THE days when apple growing was largely a farm enterprise, and the fruit was used for home consumption on local markets, the question of just when the crop should be harvested was relatively unimportant. Apples could be harvested at intervals from the time the young son announced, "Green apples are ripe," to the time much of the fruit was on the ground, without serious consequences. Under present conditions of intensive orchard production with much of the fruit destined for distant markets or for long storage, however, the question of just when the fruit should be harvested in order to combine satisfactory dessert quality with good shipping and storage quality is a very important consideration for the successful orchardist.

If the fruit is harvested when too immature it is low in sugar content, high in acidity and lacking in characteristic quality for the variety. If placed in storage it has a tendency to shrivel and also is likely to have a tendency to scald. On the other hand, if the fruit is allowed to become too ripe on the tree it is likely to develop water core, particularly in summer or early fall varieties. It is likely to develop breakdown in storage, will become mealy relatively soon after harvest and will have generally poor storage quality.

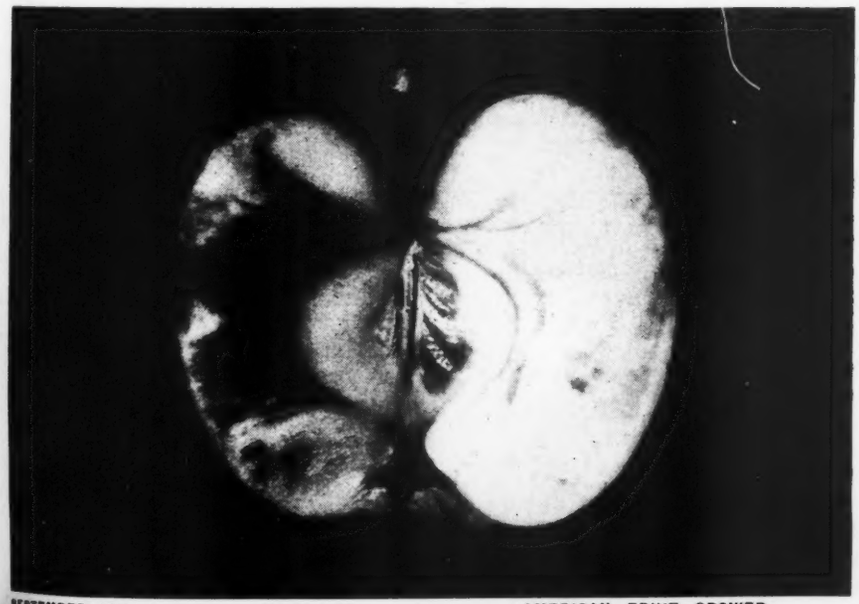
Many tests have been proposed for time of picking fruit. No one test has been developed which is entirely satisfactory, however, for determining when to pick apples. It will be impossible to review all of the considerations in such a brief article as this, but a few important factors can be pointed out.

Some of our most acute problems in regard to time of picking pertain to summer and fall varieties. These apples normally must be picked when temperatures are high. If left on the tree too long, there is likely to be severe loss from dropping, water core is likely to develop in the fruit, and breakdown under high temperature conditions is likely to develop both while the fruit is on the tree and while it is being handled to market. Unfortunately, there has been less intensive study of summer varieties than of fall and winter sorts. We will attempt to evaluate a few of the tests in common use for picking maturity of apples in general.

Picking at the proper time prevents serious storage losses.

With varieties that are subject to water core, it is very important that the grower watch for the development of water core in the fruit on the trees. Water core generally develops when

(Continued on page 9)



Water core on a Jonathan apple. Reproduced from Farmers' Bulletin 1160, U. S. Dept. of Agriculture.

AMERICAN POMOLOGY

A Page Conducted in the Interests of the American Pomological Society

OFFICERS FOR 1935

President: B. S. Pickett, Ames, Iowa.
Vice President: W. A. Taylor, Washington, D.C.
Vice President: W. S. Blair, Kentville, Nova Scotia.
Secretary: H. L. Lantz, Ames, Iowa.
Treasurer: H. C. C. Miles, Milford, Conn.

BOARD OF MANAGERS

Robert Simpson, Vincennes, Ind.
J. H. Gourley, Wooster, Ohio.
J. C. Blair, Urbana, Ill.

EXECUTIVE COMMITTEE

W. H. Alderman, St. Paul, Minn.
W. S. Brown, Corvallis, Ore.

EXECUTIVE COMMITTEE

C. E. Dutton, Milford Center, Ohio.
S. W. Fletcher, State College, Pa.
Laurenz Greene, Lafayette, Ind.
N. E. Hansen, Brookings, S.D.
Wesley Hawley, Ludington, Mich.
W. S. Perrine, Centralia, Ill.
H. L. Price, Blacksburg, Va.

EXECUTIVE COMMITTEE

H. J. Rahmlow, Madison, Wis.
Robert Simpson, Vincennes, Ind.
T. J. Talbert, Columbia, Mo.
C. C. Taylor, Louisville, Ky.
W. P. Tufts, Davis, Calif.
H. B. Tukey, Geneva, N.Y.
R. A. Van Meter, Amherst, Mass.

Edited by H. L. LANTZ, Secretary

PRESIDENT B. S. Pickett is touring the east, stopping enroute at Milford, Conn., to confer with Treasurer H. C. C. Miles and the general committee in regard to arrangements and program for the next annual meeting of the A.P.S. The dates for the meeting are December 10-13, and the meeting is to be a horticultural congress, held at Hartford, Conn. Those wishing more information about the meeting and the fruit exhibits should write Mr. H. C. C. Miles, Milford, Conn. Most of the New England states and others are cooperating and it is expected that the fruit show to be held in connection with the meeting will be one of the largest of its kind staged this year.

Progress in Spray Residue Removal

Fruit growers are now beginning to think about harvest time and fruit washing. The following is a part of the paper reported in the last Proceedings of the A.P.S. by D. F. Fisher of the U.S.D.A.

"An intensive effort is being made to develop satisfactory insecticides which are non-objectionable from the standpoint of public health. But until their effectiveness as insecticides and their non-objectionable character from a public health standpoint are fully demonstrated the apple industry in general will not take the chance of jumping out of the frying pan into the fire.

"The first consideration of any fruit grower is to produce a profitable crop. He cannot do this unless he controls the worms. If this involves heavier spraying with lead arsenate or the use of combination sprays of lead arsenate and fish oil, or even lead arsenate and mineral oil, he need not be unduly apprehensive over the matter of spray residue removal. At the same time he should realize that the complexity and difficulty of his problem after harvest depends upon the quantity of spray material he applies, how he binds it to the apple with spreaders or stickers, and the climatic conditions during the season. In 1933 in the Pacific Northwest, for example, very heavy spraying was done, many growers having to contend with as much as 15 times the tolerance of lead residue. The use of mineral oil with the lead arsenate increased the difficulty of cleaning to a very marked degree. This year, however, with a more rational spraying program and different climatic conditions, the loads of lead residue at harvest have not been as heavy, averaging only six or seven times the tolerance. This has made a tremendous difference in the fruit cleaning problem and accounts for the fact that in the Pacific Northwest this year little difficulty has been experienced in meeting the lead tolerance while last year a considerable quantity of fruit had to be rewashed several times and some never was conditioned for market.

"In this connection, let me say that so far as the lead residue is concerned the investigational work conducted by the Department of Agriculture and the various State Experiment Stations has definitely proved that it is entirely possible to satisfactorily condition the fruit by any one of several methods of washing, that the costs involved are not excessive, and that the commercial fruit industry of the Pacific Northwest is utilizing these methods effectively and satisfactorily under generally more difficult conditions than growers in other sections have to meet. No fruit grower, therefore, should refrain from following an effective spray program for the control of codling moth through fear of being unable to remove lead residue. He can save himself a lot of worry, however, and in many cases a lot of money, if he will just decide that the way to solve the fruit cleaning problem is not to be content with half way results or the use of uncertain methods.

"You may argue that growers do not know what to do. While this may be true in some cases the essential information is available in the results of the extensive studies conducted by the Department of Agriculture and the State Experiment Stations in the Pacific Northwest for the past eight years and the general experience of the industry in that area, covering about 50 percent of the commercial apple crop of the United States. I have been intimately connected with this work since its beginning, first as a field investigator in the Pacific Northwest and for the last four years having general direction of all of the Department's fruit cleaning investigations in the East, as well as in the Far West. From my knowledge of the general situation, I, therefore, venture the assertion that with one notable exception the eastern apple industry can apply directly the results of the western investigations and that in general the problem in the East is now about the same as it was in the Pacific Northwest two years ago. In other words, the eastern industry has the advantage of about two years' experience of the Northwest. Whether the problem will ever become as generally serious in the East as it does in the Northwest may well be questioned. I doubt it very much because except in certain local areas it is not generally necessary to spray as heavily as in western producing districts.

"The important exception to the general rule mentioned above relates to the use of alkaline solvents. These find considerable application in the Pacific Northwest but have proved generally ineffective in removing lead residue from eastern-grown apples. It is believed that this is because of the difference in the character of the spray residue encountered in these localities. In the Pacific Northwest fungicides such as lime-sulphur and Bordeaux mixture are not required and lime is not used with lead arsenate. In most eastern districts fungicides are used and lime is commonly added when lead arsenate is used alone, giving a mixture of spray residue materials that is quite strongly alkaline. Against such alkaline materials sodium silicate and other alkaline washes are ineffective and reliance should be had on the use of hydrochloric acid supplemented, if necessary, with other materials and means whose aid in removing spray residue has been established. In this category may be placed heat to soften or melt the waxy deposits on the apple, salt to increase the ionization of the hydrochloric acid; detergents to render physical aid in the removal of foreign matter; increasing the time of exposure to the wash; and use of brushes or rubbing devices to provide a scrubbing action.

"In connection with any discussion of washing operations, the importance of thorough rinsing must again be emphasized. And when heat is used it is equally important to stress the necessity of a careful control of temperature; first, to obtain an effective temperature and second to avoid damage from high temperatures.

"Ordinarily, apples, with the possible exception of McIntosh and other tender varieties, can be washed in solutions heated to 110° F. if they are not exposed to this temperature for longer than one minute, while they can remain in a solution heated to 100° F. for as long as three minutes without injury. With longer exposures or higher temperatures injury may occur, being exhibited by the presence of numerous small cracks arranged concentrically around the calyx and extending outward onto the cheek of the apple. These cracks are not usually apparent at the time of washing but become so within a week or two as the tissues dry out under the cracks or darken from the action of dissolved arsenic in the solution in which they were washed."

Dues in the A.P.S. are $1.25 per year. The Annual Report is ready. It contains 137 pages of useful information and is sent postpaid to all paid up members in addition to a year's subscription to AMERICAN FRUIT GROWER. If you already have the subscription, send in $1.00 and get your copy of this valuable report. The $1.00 rate also applies to Canada. Address all remittances to H. L. Lantz, Sec'y., Ames, Iowa.

WHEN TO PICK APPLES

(Continued from page 7)

the sugar content of the fruit becomes relatively high and when the fruit is exposed to high temperatures. Development of water core indicates generally that the fruit is approaching maturity. It is most likely to develop where the fruit is exposed to the highest temperatures, namely, on the south and west sides of the tree, in fruit well exposed to the sun, particularly on the higher branches. If water core is not developing in those sections of the trees, it probably is not developing anywhere. When water core begins to develop in serious proportions, it is at least an indication that the fruit is about ready to harvest and it may be necessary to harvest the fruit, even though the color is unsatisfactory, in order to prevent excessive development of this condition.

In general with red varieties, if the fruit has attained sufficient color to be packed in the higher grades, it is usually sufficiently mature for good commercial quality. The red color of most of our varieties does not develop until the sugar content of the fruit is fairly high. Therefore if the harvest date of such varieties as Williams, Jonathan, Rome Beauty, Stayman Winesap, York Imperial, and most of the other red varieties is postponed until satisfactory color has developed, there is relatively little danger that they are being picked in an immature condition.

On the other hand, the extensive planting of the early-coloring bud sports of many varieties which has been followed in recent years may render the red color criterion of less importance than it has been in the past. Many of these color sports appear to attain red color while the fruit is still immature, and if picked when they attain sufficient color to meet present packing standards, they may be lacking in characteristic quality of the variety. It would be unfortunate if the dessert quality of many of our good varieties such as Delicious, Jonathan and others should be injured through the use of color sports and more immature harvest. With the standard varieties, however, the attainment of sufficient color for U. S. No. 1 grades generally means that the fruit is sufficiently mature for satisfactory quality.

The problem is somewhat more difficult with yellow varieties such as Grimes Golden and Golden Delicious. With these varieties, also, color is an excellent criterion. Generally they will not develop good dessert quality if harvested before the ground color changes from the leaf green to the light yellow stage. The U.S.D.A. a number of years ago developed color

(Continued on page 11)

SAVE MONEY!
BUY GOODYEARS!

Why pay just as much for something not as good?

Hundreds of thousands of farmers are making money and saving money with Goodyear products. . . . They do more work and do it more easily with Goodyear equipment. . . . They know there is no substitute for Goodyear quality.

TRUCK TIRES

The right truck tire for every job on the farm is Goodyear. . . . The famous All-Weather (1) and the popular-priced Pathfinder (2) in all sizes. . . . The new Speedway, (3) the lowest priced quality truck tire. . . . No matter what your size of truck or your working conditions there is a Goodyear that will spread your tire dollars over more miles. Leaders in every price field.

IMPLEMENT TIRES

For tractors and farm implements. . . . Thousands of farmers —saving time, money and machinery—call Goodyears the greatest farm tires ever built. All-Weather (1) for all work in all seasons provides *maximum traction*—forward, backward, even on hillsides. . . . The new Pathfinder (2) brings Goodyear quality within the reach of every farmer.

SPECIAL PURPOSE TIRES

The new Studded tire (1) is especially designed for automobiles and light trucks where deep mud or snow prevail over long periods of time. No jolt on hard roads. . . . The new Balloon Lug (2) will pull your truck through any kind of going. Especially designed for back roads, ruts and tough going with heavier loads. Rides easily on the road.

AUTO TIRES

The great G-3 All-Weather (1) gives you 43 percent more non-skid mileage at no premium in price. . . . Pathfinder (2) is the outstanding leader in the popular-priced field. . . . Speedway (3) is a remarkable value at a price lower than Pathfinder. . . . Reliance (4) is the lowest-priced GOOD tire that the world's largest rubber company can build. Leaders in every price field.

FINEST SPRAY HOSE AND BELTING Farmers from coast to coast, who watch the dollars they spend as closely as the crops they grow, choose Goodyear Klingtite Belting and Goodyear Hy-Pressure Spray Hose.

THE GOODYEAR TIRE & RUBBER CO., INC., AKRON, OHIO

See Your Nearest Goodyear Dealer

GOODYEAR

MONEY SAVERS ON THE FARM

ORCHARD
REG. U. S. PAT. OFF.
BRAND
Astringent
ARSENATE OF LEAD
and other
INSECTICIDES
and
FUNGICIDES
ORCHARD BRAND SPRAY and DUST Materials
Manufactured by
GENERAL CHEMICAL CO.
40 RECTOR ST., NEW YORK
Sales Offices From Coast to Coast

Apple, Peach, Fruit Graders
that are dependable, at low cost.
Priced $125.00 and up.
For particulars write
PARMA WATER LIFTER CO.,
Parma, Idaho, U. S. A.

I. A. A. CONVENTION
AND OHIO ORCHARD DAY

By WILLIAM H. ZIPF
Field Editor

DURING the three days of the International Apple Association's highly successful convention held in Cleveland, August 13 to 16, talks and discussions brought forth the following views and comments on current conditions concerning King Apple.

In his president's address to the convention, William H. Baggs paid a worthy tribute to Johnny Appleseed (John Chapman), the wandering pioneer orchardist whose isolated forest plantings of apples were the forerunners of our present-day apple industry. Mr. Baggs said, "The inheritance of this man is ours to keep and maintain."

"The apple and pear industries are not dead!" So stated Secretary R. G. Phillips during his report, and continued with, "An industry that has met the problems of the past nine years can march forward for 50 years more."

E. W. J. Hearty, executive director of the National Code Authority, likened his message to the funeral services for the code. He said that one outstanding accomplishment of the code was to bring about meetings and discussions by members of the industry.

Speaking on current conditions, J. Frederick Essary, Washington correspondent for the *Baltimore Sun*, said that during the past two years something has happened to raise farm income in this country from one-fourth to one-third and this along with the boost of public morale proves that, as a nation, we are not whipped.

"Now, more than ever, we are dependent on foreign markets to care for our surpluses," said Russell Weisman, associate editor of the *Cleveland Plain Dealer* and associate professor of economics at Western Reserve University.

As a result of trade agreements, $3,350,000 worth of apples were introduced into France bringing benefit to producers in this country, stated R. G. Phillips in his report.

According to Hon. William Phillips, Acting Secretary of State, who gave his convention message from Washington, D.C., over the facilities of the NBC, the United States is the principal source of fresh apples and pears for Canada, France, Netherlands, Belgium and Sweden.

Speaking on foreign trade, F. A. Motz, foreign agricultural representative of the U.S.D.A. in London, remarked, "The fruit trade of the world is beset by two divergent forces. On the one hand the discoveries of the various health properties of fruit have developed an increased demand for imported fruit in the diet of most peoples. On the other hand there is a desire for self-sufficiency in most countries which has resulted in the encouragement of trade barriers."

At the banquet session it was reported by Harry S. Hall that the International Apple Association had received 146 new members during the past year.

The foreign trade outlook, particularly for the United Kingdom, is more encouraging than it has been for several years. The crop in England, due to late spring frosts, has been greatly reduced, says F. A. Motz. He continued by stating that Europeans have become used to good fruit and the grower or shipper who looks upon Europe as a dumping ground for inferior fruit at a high price had better look elsewhere for his Utopia.

H. W. Porter of MacIntyre and Porter, Rochester, N.Y., was the happy winner of the new car given by the Cleveland committee under the general-chairmanship of K. B. Pocock.

Ohio Orchard Day

At the conclusion of the talk given by Dr. George F. Potter, head of the Department of Horticulture at the University of New Hampshire before those in attendance at the Ohio Orchard Day at Wooster the note-book of your field editor contained the following items. The morning of the day of the meeting, August 16, was taken up by orchard tours and the inspection of exhibits. Fine attendance was the order of the day.

In the future there will be more and more apples from New England with the trend toward the McIntosh, as this variety will constitute three-fourths of the crop this year.

Another trend in New England is to grow apples on young trees. The production of good fruit on old trees is so difficult of accomplishment that it is not worth while.

A practice rapidly gaining favor with the northeastern fruit men is to apply mulch to the soil one year before the trees are planted. This procedure is of aid in that it kills the grass and the mulch is already there when the tree is placed in the soil. The hay is cut and piled on the tree stakes which mark the planting location for the following year.

(Continued on page 11)

93 years'
LEADERSHIP
We started the manufacture of rubber footwear in 1843. Each year we have improved our product. Today the "U. S." boot is the best boot we know how to make.
United States Rubber Products, Inc.
United States Rubber Company

WHEN TO PICK APPLES

(Continued from page 9)

charts which are very valuable in connection with the determining of time of picking of such yellow varieties as well as for use in connection with red varieties.

Another criterion that is of great value, we believe, in determining approximately when fruit should be picked is the time interval between the date of full bloom and the date of harvest. In general the different varieties require about a certain interval to reach satisfactory maturity following full bloom. While this will vary somewhat with growing conditions, the interval has been remarkably uniform in different sections of the country and under different summer growing conditions. Thus Winesap requires about the same interval in Washington State and in Virginia. Baldwin requires about the same interval in Virginia and Maryland and in New York and New England. If we consider full bloom the date when petals are beginning to fall in the orchard, the interval required for some of the leading commercial varieties is about as follows: Yellow Transparent 75 days, McIntosh 125 to 130, Jonathan 140 to 145, Grimes Golden 145, Delicious 145 to 150, Baldwin 145 to 150, Northern Spy 145, Ben Davis 155 to 160, Rome Beauty 160 to 165, Stayman Winesap 160 to 170, York Imperial 160 to 170, Winesap 165 to 170, and Yellow Newtown 165 to 170.

These data on time interval required for fruit to reach maturity are particularly important during seasons of unusually early bloom generally followed by unusually early maturity. In such seasons normally late fall varieties are likely to ripen early while the weather is hot. Under such conditions frequently the fruit is not well colored either for red color or for the yellowing of the ground color. If the harvesting of the fruit is delayed until the regular calendar date, it will be badly over-mature on the tree. With such fruit it is necessary to harvest it in about the proper condition even though color is poor and to put it into cold storage promptly to obtain even fairly satisfactory storage quality. Such a condition prevailed on the Pacific Coast last year (1934). With an extremely early bloom and a harvest season which should have been three to four weeks earlier than normal, much of the fruit became over-mature on the trees. Also, the harvesting and packing operations were carried on of necessity during very hot weather. Much of the fruit was over-ripe before it went into storage. Consequently the general storage quality of the whole crop was poor. Similar conditions have prevailed in the East in certain sea-

(Continued on page 13)

"Hello, Bill, can you give me a hand at silo filling tomorrow?"
Silo filling season—and a farmer near Northwood, Iowa, is rounding up his neighbors by telephone. A few calls and he'll have all the help he needs.
In any season, the farm telephone saves time and useless trips. It brings the latest market reports so that you can sell your produce at the right time. It helps you order farm machinery, seed, and fertilizer. It gives valuable assistance in business contacts and keeps you in touch with relatives and friends.
But the value of the telephone cannot be reckoned alone in day-by-day contacts, business or social. There comes a time when you are in need of a doctor or veterinarian—a time of illness or accident, fire or theft, and you must get some one, somewhere, quickly. It is then that the telephone renders a priceless service.
BELL TELEPHONE SYSTEM

OHIO ORCHARD DAY NOTES

(Continued from page 10)

The best indication of potash and phosphorus deficiency is the lack of response from the addition of nitrogen.

Spraying is the key operation on the modern fruit farm.

Cyanamid is becoming increasingly important, as orchard soil must not be acid.

During the day growers with large orchards spray with the wind and at night, when the wind has died down, they use lights on their equipment to finish the spraying.

If the tolerance is changed from .018 to .014, there will be residue trouble in New England. Dr. Potter commended the work of the American Pomological Society in endeavoring to raise the tolerance.

Just before the talk by Dr. Potter, Paul Stark of Stark Bro's Nurseries gave a short message concerning the work of the National Apple Institute.

On August 15, the summer meeting of the Ohio Horticultural Society was held at the Grand River Orchards, Geneva, Ohio. The attendance was fine and the program was in the nature of a discussion. The orchard layout was viewed by the group.

Rugged Farm Trucks of International Quality at Surprising Low Prices

● International Trucks have always been known as high-quality trucks that any man could absolutely depend on for long, hard mileage and trouble-free service. Thousands of farmers are hauling with old Internationals today with never a thought of replacement. *They are reaping the benefit of their wise investment of years back.*

So it is no wonder that people are flocking to International ownership today, for today Internationals are being bought at *far lower prices.* Demand from both industry and agriculture has brought about large-volume production—and that makes possible such International prices as you see on this page, *without sacrifice of quality.*

Haul *your* loads with International. Don't be satisfied with less at today's low International prices. Sizes from Half-Ton to powerful Six-Wheel trucks. Ask any International branch or dealer to demonstrate a truck for you.

INTERNATIONAL HARVESTER COMPANY OF AMERICA (*Incorporated*)
606 S. Michigan Ave. Chicago, Illinois

All types of bodies are available.

$595 for the chassis of the 1½-ton truck above, f.o.b. factory. This is the International Model C-30 with 133-inch wheelbase.

$400 for the Half-Ton International chassis, 113-inch wheelbase, f.o.b. factory. Shown at right above with streamlined panel body.

INTERNATIONAL TRUCKS

APPLE STORAGE

(Continued from page 6)

favorable results. Greater uniformity of temperature is attained in different parts of the room and at different heights of the floor than with the coils. While the storage is being filled and warm fruit is brought in daily, these machines operate almost continuously and the flow of air created tends to remove the heat from the apples quickly and satisfactorily. After the storage is filled the machine operates only at infrequent intervals. The fear that the forced circulation of air will cause apples to shrivel appears to be ungrounded. Accurate measurements have revealed a slightly greater loss of water from apples exposed to the draft than from similar apples in coil rooms but the difference is so small as to be of no commercial significance. Surprisingly enough, these machines reduce installation costs. The amount of heat which is taken up by any given quantity of piping depends upon the rate of air movement over it. Within the cabinet, air movement over the pipes is so rapid that the actual saving in the cost of piping more than pays for the fan, motor, and mechanical equipment.

Under ordinary circumstances, prompt placing of the fruit in storage after picking and rapid removal of the heat after placing in storage is considered the best commercial practice. Prof. Rasmussen's tests have shown that in the McIntosh variety a type of internal breakdown illustrated on page 5 is very common. If after picking the apples are held 4 or 5 days at the ordinary outdoor temperatures, prevailing during the McIntosh picking season, internal breakdown is very markedly reduced. In fact, a 10-day delay usually eliminates this trouble entirely. Although after delayed storage the fruit tends to become overripe at an earlier date, in the majority of seasons, McIntosh apples placed in the cold 4 or 5 days after picking are in better marketable condition during February and March than those stored immediately after harvest.

In selecting and handling fruit for cold storage, the time-worn advice that only sound fruit of good quality should be used cannot be over-emphasized. On low grades, storage charges may be more than the increased increment in value. Tests show that apple scab lesions may grow considerably even at 32° F. and they provide an easy entrance for decay. Experience in New England is dictating that even though grade regulations allow a small amount of scab on first grade fruit, when the apples are going into storage, they must be graded

(Continued on page 14)

WHEN TO PICK APPLES

(Continued from page 11)

sons and are particularly disastrous where common or air-cooled storage is employed. Not only is the storage quality of the fruit poor, but the conditions for air-cooled storage are also very unfavorable, as a longer interval in storage must elapse before the temperatures of the fruit can be reduced enough to hold it satisfactorily.

Two other tests should be mentioned in connection with time of picking. When fruit begins to drop from the tree in considerable quantities it is an excellent indication that the fruit is reaching a satisfactory picking condition. Finally the pressure test which measures mechanically the firmness of the flesh of the fruit has been used to a considerable extent in recent years as an indication of maturity of apples, pears and other fruits. While this test is less satisfactory with apples than with some other fruits, it is of value when considered in connection with other tests outlined above, particularly in showing whether or not the fruit is becoming over-mature on the trees. It is also of value in indicating in many cases lack of maturity. We would not recommend the use of this test on apples exclusive of the other considerations of color, time interval following bloom and the way the fruit is holding on the trees. By taking into consideration these factors it gives added information relative to the condition of the fruit.

It is thus apparent that no one test developed to date can be used to determine when apples should be picked. The color of the seeds is of relatively little value in this connection. Most summer varieties must be picked before the seeds are brown. On the other hand, in winter varieties the seeds usually become brown several weeks before the fruit is ready to harvest. Chemical tests to determine sugar content or acidity of the juice have been tried extensively but have not proved adaptable for use in connection with apples. The sugar content of the juice varies so much, depending upon the amount of crop on the tree and the seasonal growing conditions, that it appears of little value as a picking criterion with this fruit.

The problem of accurately determining when the fruit should be picked is more acute with the early-ripening varieties, both summer and early fall, than with late varieties. Ten days' variation in the time of picking such varieties as York Imperial or Winesap which normally ripen when the weather is cool generally does not make a great difference either in the storage or the dessert quality of the fruit. On the other hand, a delay of 10 days after proper maturity with such varieties as Jonathan, Grimes Golden, Wealthy and McIntosh may mean a heavy loss from dropping or distinctly poor storage quality. Particularly careful work needs to be done to determine when the red bud sports of the different varieties now so popular for planting are in satisfactory harvesting condition, in order to avoid the mistake of picking these strains too early and therefore having them attain a reputation as being of poor quality.

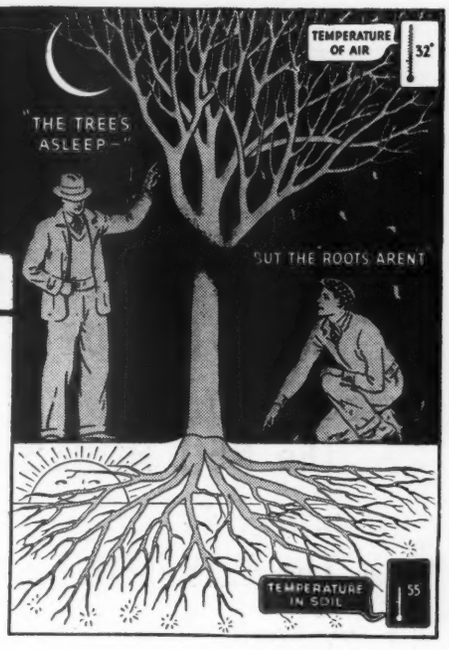
Books for Fruitmen

DESTRUCTIVE AND USEFUL INSECTS, *by C. L. Metcalf and W. P. Flint,* McGraw-Hill Book Co., Inc., New York City.

Written in an interesting and easily understandable style, this book contains complete discussions on the important economic insects. Of especial interest is the section of 139 pages devoted to insect pests of deciduous and citrus fruits. The importance and type of injury, trees attacked, distribution, life history, appearance, habits and the control measures in vogue at the time the book was published are discussed for each fruit insect.

FERTILIZE YOUR FRUIT TREES .. *THIS FALL*
with Granular 'Aero' Cyanamid

GET THE JOB OUT OF THE WAY OF SPRING WORK



Even though the top is dormant —

THE ROOTS ARE STORING UP NITROGEN AND OTHER PLANT FOODS FOR NEXT YEAR'S USE

•

FALL-FERTILIZED TREES ARE LESS SUBJECT TO INJURY FROM SPRING FREEZES

'Aero' Cyanamid is the preferred source of nitrogen for fall use because it is NON-LEACHING

Send for Leaflet F100 on fall fertilization and our regular fruit Leaflet X307.

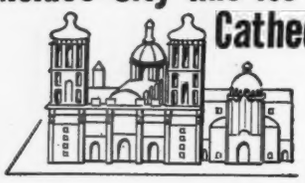
AMERICAN CYANAMID COMPANY

ATLANTA, GA. NEW YORK, N. Y.

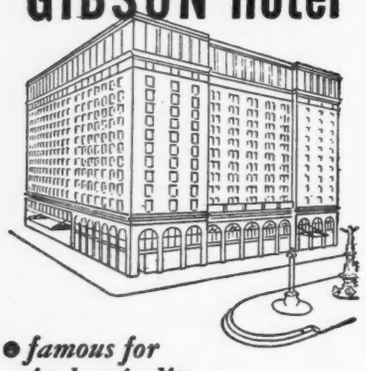
'Aero' Cyanamid is Nitrogen plus Lime

FAMOUS LANDMARKS

Mexico City has its Cathedral



Cincinnati has the GIBSON Hotel



● *famous for its hospitality*

"I would like to stay longer!" That's the sentiment of those enjoying Gibson's renowned hospitality. Modern as tomorrow in every appointment—age-old in its spirit of service. Restaurants and bars as delightful as the lovely rooms.

Rates—from $2.50 single; $4 double

F. W. PALLANT, General Manager

DeWITT OPERATED HOTELS

featuring—Unusually Comfortable Rooms, Good Food, Carefully Prepared and Rates from $2.50 Single

In CLEVELAND it's
The HOLLENDEN
●
In COLUMBUS it's
The NEIL HOUSE
●
In AKRON it's
The MAYFLOWER
●
In TOLEDO it's
The NEW SECOR
●
In SAVANNAH (Ga.) it's
The GENERAL OGLETHORPE
"On Wilmington Island"
●
In MIAMI BEACH it's
The FLEETWOOD
An Exclusive Winter Resort Hotel

APPLE STORAGE

(Continued from page 12)

scab free insofar as it is humanly possible.

Picking the apples at the proper date of maturity is also of considerable importance. It is well known that immature fruit is exceptionally susceptible to scald. While the use of oiled wrappers or shredded oil paper placed in boxes or barrels will generally prevent this trouble, certain varieties scald in spite of oil. Experience in New England indicates that in certain seasons the Cortland, if it is picked early, will scald even though stored in oiled wraps. If it is harvested too late, it appears to be especially susceptible to breakdown affecting the outer cortical regions. The picking season for this variety will apparently be a comparatively limited one, beginning in the latitude of southern New Hampshire shortly after the McIntosh harvest and ending before Baldwins are mature.

The opinions of many fruit growers and of most fruit dealers to the contrary notwithstanding, scientific tests seem to indicate that the fertilizer treatments do not affect materially the keeping qualities of apples. The opinion that fertilization with nitrogen shortens storage life is not substantiated by actual trials. Of course, if trees are so pruned or thinned and fertilized as to make the apples oversized, a shorter life in storage is to be anticipated. Also if fertilizer or any other factor materially reduces the color of the crop it is predisposed to storage scald. Nor do apples fertilized with potash or phosphorus appear to keep better than those fertilized with nitrogen only. For several seasons at the New Hampshire Station apples picked from trees fertilized over a period of 12 to 16 years with a mixture containing 3 lbs. of potassium sulphate and 8 lbs. of superphosphate per mature Baldwin tree have shown no measurable difference in color, flavor, acidity, or rate of softening as compared to others fertilized with the same quantity of nitrogen but without the phosphorus and potash.

Michigan Honors Taft

ON the annual Farmer's Day meeting held July 26 at East Lansing on the campus of Michigan State College, a bronze tablet was unveiled which reads:

On this spot, May 24, 1889,
Professor Levi R. Taft
First in Michigan,
A Pioneer in America
Began the Control of Orchard Diseases
by Spraying

The tablet will be mounted on a large granite rock at approximately the same spot where the first experimental spray application was made. Professor Taft was present at the unveiling.

OPPORTUNITY ADS

Only 15c a Word—CASH WITH ORDERS
ADDRESS: AMERICAN FRUIT GROWER
1370 Ontario Street, Cleveland, Ohio

BABY CHICKS

WORLD'S LARGEST CHICK PRODUCERS. LEADING breeds. Now hatching. Prompt delivery. Low prices. Catalog Free. COLONIAL POULTRY FARMS, Pleasant Hill, Missouri.

CHAIR SPLINTS

WHITE OAK AND HICKORY CHAIR SPLINTS, 1000 feet $1.40. Postpaid. DAVID HARDIN, Paintsville, Kentucky.

CIDER MILLS

CIDER AND GRAPE PRESSES, GRATERS, PUMPS, filters and supplies. Booklet on how to keep cider sweet and make vinegar quickly, free. PALMER BROS., Cos Cob, Connecticut.

DAIRY GOATS

DAIRY GOAT JOURNAL, DEPT. 21, FAIRBURY, Nebr. Monthly Magazine, 25c yearly; 5 months 10c.

FARM FOR SALE

NUT FARM, 140 ACRES IN WEST CENTRAL ILLINOIS, near Pittsfield. Six-room house. One new summer cabin. Forty acres in black walnuts, one to seven years old. Five acres in hickories. Some native timber and farming land. Well located on gravel road. Eighty dollars per acre. GEORGE GIBBENS, Godfrey, Illinois.

FRUIT GRADERS

THE SIMPLEX SORTS FRUIT INTO ANY FOUR sizes desired. Soft rubber cups with interchangeable sizing rings—cannot bruise. Complete with bins—nothing to build or assemble. Weighs but 200 pounds; folds to four feet of space for storing. Equipped with motor, $115. Hand power, $85. For gas engine, $95. Send for circular. BUTLER MFG. CO., Conneaut, Ohio.

NURSERY STOCK

CHIEF AND LATHAM RASPBERRY PLANTS. A. B. COLEMAN & SON, Aitkin, Minnesota.

OLD COINS WANTED

$2000.00 FOR 1c. WE PAY THE WORLD'S HIGHEST Prices for old coins, and paper money. Large Cents up to $2000.00 each. Half cents $250.00, 1909 cent $10.00, Indian head cents $50.00, half dimes $150.00, 25c before 1873 $300.00, 50c before 1879 $750.00, silver dollars before 1874 $2500.00, gold dollars $1000.00, trade dollars $250.00, 1822 $5 gold $5000.00, old paper money $26.00, encased postage stamps $12.00, certain foreign coin $150.00, etc., send dime for large illustrated list before sending coins. ROMANOCOINSHOP, Dept. 583, Springfield, Mass.

PATENTS

PATENTS—SEND ME SKETCH, PICTURE OR MODEL of your new invention. I will give you prompt report on its probable patentability based on a search of the patent records for a small charge.
PLANTS, BUSHES, TREES, VINES, etc., can now be protected by Patents. I can furnish copies of any or all plant patents issued to date.
GEORGE E. COOK
Registered Patent Attorney
International Bldg., 1319 F Street Washington, D. C.

National Trade Mark Company
Munsey Building
Washington, D. C.
Trade Mark Specialists

PHOTO FINISHING

ROLL FILM DEVELOPED, 8 GUARANTEED CRYstaline prints and two double weight phototone enlargements 25c. Our work done by professionals. Quick service. PEERLESS PHOTO SHOP, La Crosse, Wisconsin.

ROLLS DEVELOPED. TWO BEAUTIFUL DOUBLEweight professional enlargements and eight guaranteed Never-Fade Perfect Tone Prints. 25c coin. RAYS PHOTO SERVICE, La Crosse, Wisconsin.

FILMS DEVELOPED ANY SIZE, 25c COIN, INCLUDing two enlargements. CENTURY PHOTO SERVICE, Box 829, La Crosse, Wis.

POROUS HOSE IRRIGATING

WRITE ABOUT POROUS HOSE IRRIGATING. B. & B. IRRIGATING SYSTEM, Port Clinton, Ohio.

SALESMEN WANTED

CASH PAY WEEKLY FOR SALESMEN—SPARE OR Full time. Thousands make $50.00 or more in a week SELLING STARK TREES, etc. Healthful outdoor work. Write Quick for FREE Sales Making Outfit and WEEKLY PAY Plan. No Cash or Experience needed. If you can't sell, BUY Stark Trees. WRITE FOR CATALOG. STARK NURSERIES, Box C-195, Louisiana, Missouri.

PILES DON'T BE CUT

UNTIL YOU TRY THIS WONDERFUL TREATMENT

for pile suffering. If you have piles in any form write for a FREE sample of Page's Pile Tablets and you will bless the day that you read this. Write today. E. R. Page Co., 422-A2 Page Bldg., Marshall, Mich.

BREEDING BETTER NUT VARIETIES

THE breeding of nut trees is a field that has scarcely been touched by either the professional or the amateur horticulturist. No phase of nut culture however offers greater promise for the advancement of nut growing in the North than the breeding of varieties superior to those now being grown. Practically all, if not all, of the northern varieties of nuts are characterized by their faults, usually serious ones, which in many cases are sufficient to prevent the commercial culture of these varieties.

New sorts equal to or supposedly superior to the older varieties are being discovered through the medium of prize nut contests, but we cannot long expect this method to continue yielding varieties better than the older sorts. There is a limit to what Nature can offer in variety improvement. One need only consider the varieties of raspberries, strawberries, grapes, peaches, plums and other fruits to see what the guiding hand of man can do in developing better varieties. Superior nut trees, scattered about as they are, hybridize only with the inferior wild trees nearby. Brought together in orchards they may be hybridized readily with other superior sorts either artificially or naturally.

For many years to come the amateur must do much of this work. Experiment stations are inclined to devote their facilities to research with established horticultural industries. Some suggestions for the amateur nut breeder are here proposed.

The simplest and easiest form of nut breeding is the raising of seedlings from superior varieties. Since nut trees are wind pollinated, the pollen presumably comes from nearby trees. If these nearby trees are also superior varieties, as in a variety collection, the chances are rather good that the resultant seedlings will have these superior sorts as both parents. Such seedlings will probably be much superior to seedlings raised from good varieties pollinated by wild nuts. If those land owners who are contemplating the planting of seedling nut trees for reforestation or on such a scale that the use of grafted trees is not possible, would plan to secure their seed from variety collections when possible, the general level of merit would undoubtedly be much higher than where wild seed is used.

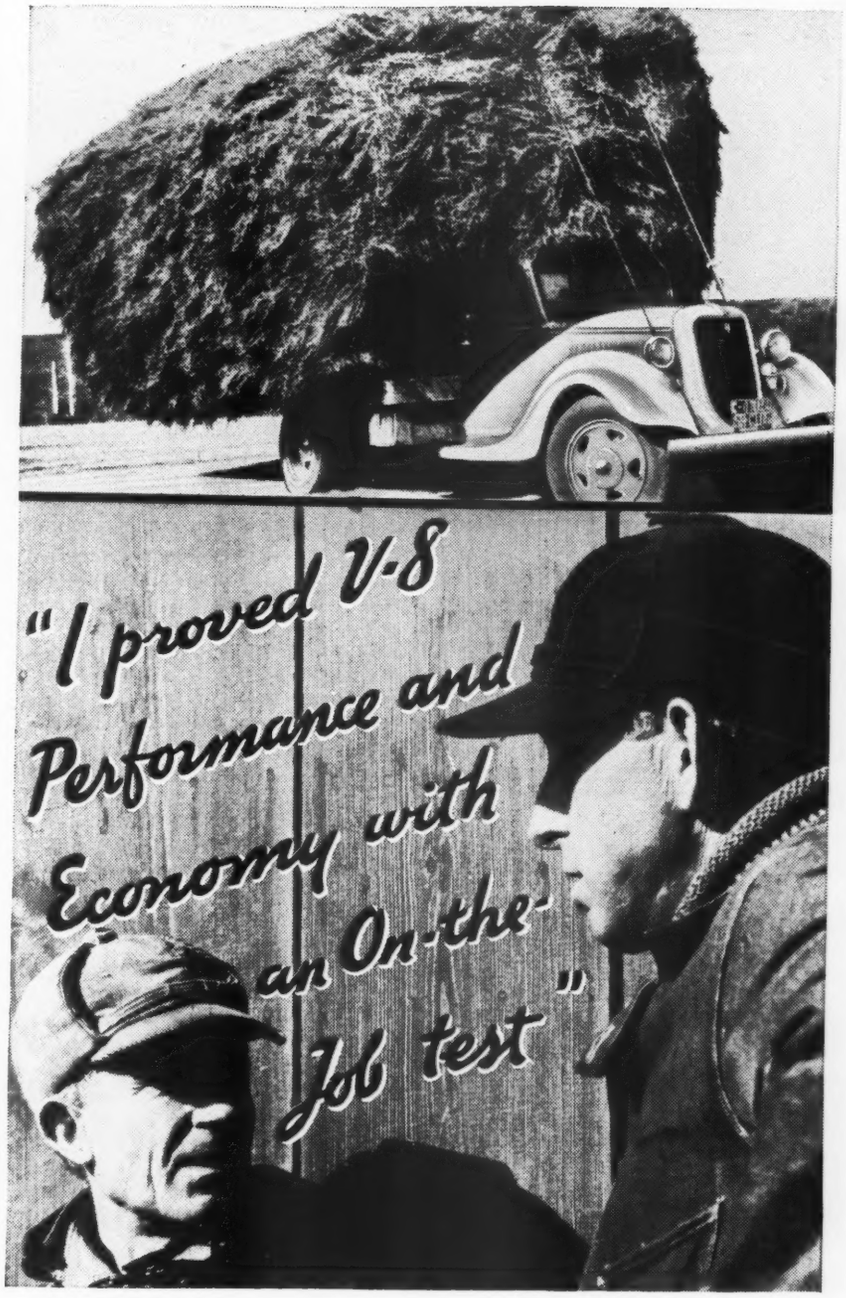
If the amateur wishes to produce his own hybrids from controlled pollinations this may be done rather easily. Protect the female flowers from open pollination by enclosing them in a white paper sack well in advance of the shedding of pollen by other similar nut trees in the vicinity. When the female flowers are ready for pollination, which will be about the time pollen is being shed, apply pollen of the desired pollen parent to the female parent and immediately replace the bag to prevent contamination. After the nuts have set, remove the paper bag and enclose the cluster in a gauze or cheesecloth bag to prevent loss of the nuts due to squirrels or windstorms.

If the parents are selected carefully so that as many desirable characters as possible are brought together in each cross, some worthwhile hybrids should result.

If everyone planting nuts from which bearing trees are desired would use seed of good varieties, preferably from trees favorably located with respect to pollination by other good sorts, many new and superior nut varieties should result.

Many members of the Northern Nut Growers' Association have variety collections and will be glad to assist members and others in securing superior seed for planting purposes.

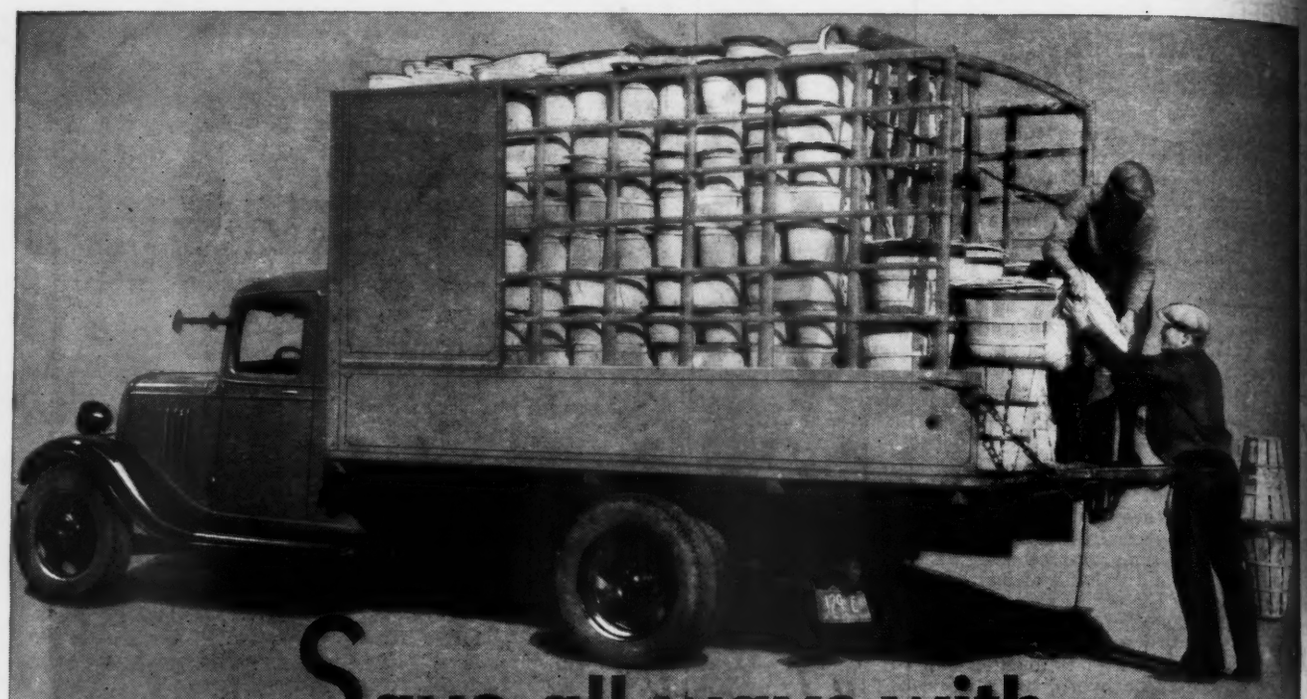
G. L. SLATE, *Sec'y.*, Geneva, N.Y.



"ALL TRUCKS look good in the dealer's showroom. They all sound good when you hear the salesman telling about them . . . or when you read about them in catalogs or advertisements. But you can PROVE what the Ford V-8 Truck will do . . . by making an 'ON-THE-JOB' TEST with your own loads on your own farm."

You don't have to guess any more. Before you BUY any truck TRY this Ford V-8 Truck on your own jobs. Perhaps, like thousands of truck owners, you'll find out it's just the truck you need to do your hauling at the lowest cost.

FORD V·8 TRUCKS AND COMMERCIAL CARS



Save all ways with CHEVROLET TRUCKS

they're the most economical trucks you can buy

WORLD'S LOWEST PRICES

VALVE-IN-HEAD SIX OPERATING ECONOMY

YEAR-AFTER-YEAR DEPEND-ABILITY

CHEVROLET

These big, powerful Chevrolets are designed, built and priced to save you money all ways. Consider the following facts and you will realize how true this is: First, Chevrolet Trucks sell at the *world's lowest prices*, so you'll be money ahead right at the start by choosing a Chevrolet. Second, they are powered by six-cylinder valve-in-head engines—*the more economical type of power plant*—so you will save more money on gas and oil day after day—have more money to spend for other things. And third, Chevrolet Trucks are made *extra-strong, extra-sturdy*, to bring you the additional savings of dependable, carefree service over a long period of years.

Chevrolet builds real quality, real strength and stamina, into every part of these trucks . . . into the big, husky frame . . . into the stabilized front-end mounting . . . into the clutch and transmission . . . into the great rugged rear axle . . . and this fine quality manufacture assures the highest degree of efficient, economical performance throughout Chevrolet's unusually long life. Visit your nearest Chevrolet dealer at your earliest convenience and have a thorough demonstration of the right Chevrolet Truck for your haulage needs. Place your order for a Chevrolet *and you will save money all ways*, for it's the most economical truck you can buy!

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN

Compare Chevrolet's low delivered prices and easy G.M.A.C. terms. A General Motors Value